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☞See advertisement on last page.

Poetry.

CHIDE MILDLY THE ERRING.

BY CAPT. S. W. PATTEN, U. S. A.

Chide mildly the erring!
Kind language endears;
Grief follows the sinful,—
Add not to their tears.
Avoid with reproaches
Fresh pain to bestow,
The heart which is stricken
Needs never a blow.

Chide mildly the erring!
Jeer not at their fall!
If strength were but human,
How weakly were all!
What marvel that footsteps
Should wander astray,
When tempests so shadow
Life's wearisome way!

Chide mildly the erring!
Entreat them with care!
Their natures are mortal,—
They need not despair.
We all have some frailty,
We all are unwise,
And the grace which redeems us
Must shine from the skies.

THE HUMBLE HAPPY MAN.

BY R. BARTHOLOMEW.

Oh pass not by yon lonely man,
With haughty look and proud,
Though sunburnt is his brow, and though
His back with toil is bowed.

His simple cup and daily bread,
By industry are gained;
And calm each night he sinks to rest,
His hand with fraud unstained.

Within his humble whitewashed cot,
This lesson kings might learn,
"How happy virtue can make those,
Who toil their bread to earn."

No glittering crest shines on his wall,
Which tells of lineage high,
But there's a hope within his breast,
The proudest might envy.

An honest heart, a life well spent —
A hope beyond the tomb,
Aye crowns his board with sweet content,
'Mid poverty and gloom.

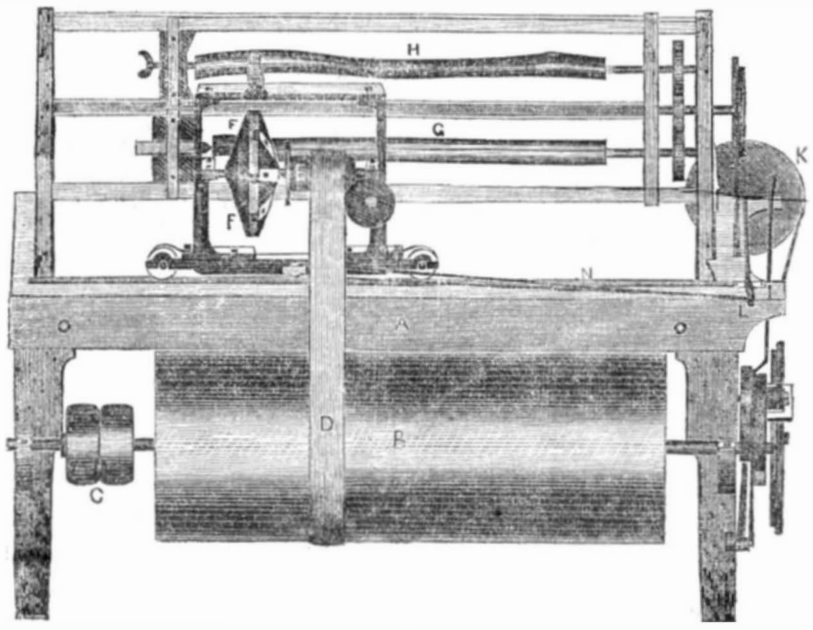
Lost Time.

I threw a bauble to the sea,
A billow caught it hastily;
Another billow quickly came
Successfully the prize to claim;
From wave to wave, unchecked, it passed,
'Till tossed upon the strand at last,
Thus glide unto the unknown shore,
Those golden moments we deplore;
Those moments which not thrown away,
Might win for us eternal day.

Numbers and Philosophy.

Pythagoras, a Greek philosopher, contended that numbers from 1 to 10, govern all things, as—1. bound, or the infinite; 2. the odd and even; 3. one or many; 4. right or left; 5. male or female; 6. rest or motion; 7. straight or curved; 8. light and darkness; 9. good and evil; 10. square and oblong.

MACHINE FOR TURNING IRREGULAR FORMS.



This is an engraving of a machine of Blanchard's Patent owned by Mr. A. K. Carter, of Newark, N. J. and as we have described a number of Last and Spoke machines, and others for turning irregular surfaces, we present this week a view of the machine which has been the cause of so much litigation and the patent for which has been renewed by act of Congress and will be in full force for 14 years from last January. This machine is perfect in principle, as it can turn out a duplicate or fac simile of any pattern whatever, and it is now brought to such minute perfection in all its parts, that an oar blade, a spoke, a last and an axe helve, are all turned upon it with equal facility and equal perfection. At this time we can say no more than give a brief description of the machine, and reserve some other information respecting it till our next number.

This is a front view as seen looking somewhat down upon the machine. A, is the frame. B, is a large drum. C, is a driver pulley. D, is a band which from the drum passes over a pulley E, and drives its rotary cutter wheel F F. This cutter wheel is fixed on an axis in a small sliding frame which moves from one end to the other of the lathe, by a cord N, winding upon a spindle lying across the machine which cannot therefore be seen, but which is driven by the large pulley K, thus giving it a requisite slow motion. H, is the pattern axe helve, and G, the rough material to be cut exactly like H. The pattern and rough material are placed in the lathe—represented by the upright frame—and sustained by spindles. On the back part of the machine, there is a curious but beautiful sliding rest, which is the subject of a patent in itself. It moves along after the cutter wheel and has two plane faces on which the pattern and cut helve rest. The pattern and helve roll upon the planes, while the rest has a rocking motion which accommodates itself to all the uneven turning of the patterns, &c. as they revolve. For turning long articles, this rest is a beautiful and positively necessary part of the machine. To turn a fac simile of any pattern, it will at once be evident to every mechanic, that if a pattern be placed in a lathe and the material to be turned be placed with its axis of rotation similar to that of the pattern, and if a guide pressing on the pattern directs a wheel with cutters to operate on the rough material over a surface like the pattern as guided, a perfect representation of the pattern will be produced on what was the rough material—simply by the cutters chipping away all the rough material outside of the axis of direction—in other words, all the wood on the rough material outside of the pattern. This is the principle upon which this machine is constructed. The cutter frame slides from one end to the other of the pattern and the small guide seen on the frame pressing on the pattern makes the cutters chip away all the rough material outside of the pattern, on G, as the cutter frame moves from end to end of the lathe. The cutter wheel has three motions—a rotary, a horizontal and an eccentric motion. The pattern and rough material revolve in the lathe. This is done by three pinions on the right moved by the pulley seen above K. The speed of the spindles in the lathe are regulated by a very excellent arrangement of a small gang of pulleys and straps seen on the right at the end of the machine. These pulleys are operated by a lever L, and they are so arranged that a slower motion is communicated to the spindles when the thicker part of the pattern is to be turned, or such a part as an oar blade. The cutter frame moves along from one end to the other of the lathe upon a rail, and it is pressed out and in according to the shape of the pattern, by the upper guide, and the cutter wheel being directed in the same manner thus cuts the pattern on the rough material. The strap D, is retained in its proper place by a grooved pulley on the cutter frame, and the whole kept firm and snug to the work to be turned. The above drawing is taken from a model that has been before the Court to establish the principle of Blanchard's invention, and we will find more room for other details at another time being now limited to a brief description.

The Comet.

Encke's comet was seen on Monday morning last, about 2 o'clock, at Cambridge Observatory, by Mr. G. P. Bond. It appeared like an exceedingly faint nebulous patch of light. It was seen again on Wednesday night and Thursday morning, having increased in brightness since Monday.

Singular Death.

Christopher Dunn, of Belgrade, Maine, was walking in a room where a gun and bayonet were hanging horizontally against the wall, and at the moment when his shoulder was near the bayonet, the lightning passed from the point of the bayonet to his body and killed him.

RAIL ROAD NEWS.

Improvement in Railroad Speed.

The Harford (Conn.) Times says that two weeks ago a railroad train with a new engine having 5½ feet driving wheels, ran from Springfield to Harford with 5 passenger cars and 250 passengers in the short space of 33 minutes. The distance is 26 miles, or at the rate of 50 miles an hour—and from Springfield to New Haven, a distance of 62 miles in 1 hour and 30 minntes. This is the quickest trip ever made in this country with a heavy train over any railroad, and the road is now regularly run with greater speed than any other railroad in the United States, and with double the average velocity of railroads out of New England. This is owing to the road being remarkably straight, level, and thoroughly constructed.

With engines having driving wheels seven and eight feet in diameter, which have been brought into use on the best roads in England, there is litile doubt that the Harford and New Haven Railroad could be run with perfect ease and safety at the rate of 50 to 60 miles an hour. But the engine makers of this country hitherto have enjoyed to such a degree a monopoly in their business, and realised such large profits (from 40 to 50 per cent.) upon it, that they have been contented to furnish the old-fashioned small wheel engines, and not shown the usual enterprise of our American artizans in keeping pace with and generally outstripping the improvements and inventions of their British rivals.

We want to see our trains making the average speed of 50 miles per hour. They will do this yet.

New Rail Road Bridge.

The Hartford and Providence Railroad Company have made a contact with Messrs. Harris and Stone, of Springfield, for the construction of a Railroad Bridge over Connecticut River, about three-eights of a mile above the present bridge. The price is $77,000—$10,000 of which is to be paid in stock. This is a saving from the original estimate, which was $100,000. The work is to be commenced forthwith, and to be completed by the first of November, 1849.

Principle of Railroad Damages.

The Albany Journal says: There is a law in this State which holds Railroad Companies pecuniarily responsible for deaths on their roads. Under this law Mr. Howard, father of the young man who was killed in May last, by a collision near Herkimer, applied for damages, and the Company offered to pay all expenses and $2,200 beside. The offer was accepted.

Railroad between Watertown and Rome.

The Watertown, N. Y. Journal, says the survey of the route of this Road, just completed, reduces the distance nearly five miles. The estimated expence of construction is also reduced about $240,000. The work is to be pushed forward vigorously

The little Miami and Mad River railroad is expected to be ready at the end of the week, when there will be an uninterupted line of railroad from Cincinnati to the Lakes.

Railroads are said to have been highly beneficial to the public health in Boston, in consequence of the facilities they afford for a residence and excursions in the country.

Hints to Young Farmers.

Make it a rule to read a little every day, even if it is but a single sentence. A short paragraph will often afford you a profitable source of reflection for the whole day. For this purpose your agricultural paper is admirably adapted. Keep it always within your reach so that you may lay your hand on it at any moment when you are about the house.

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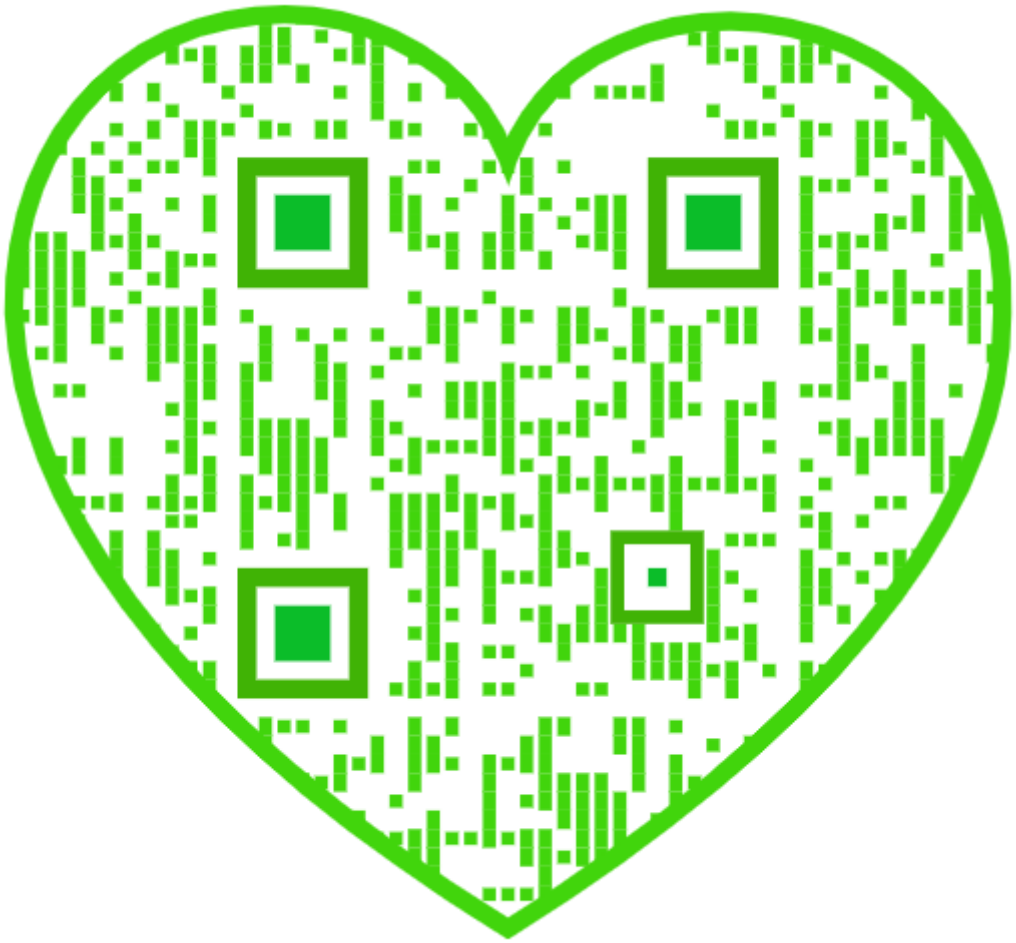

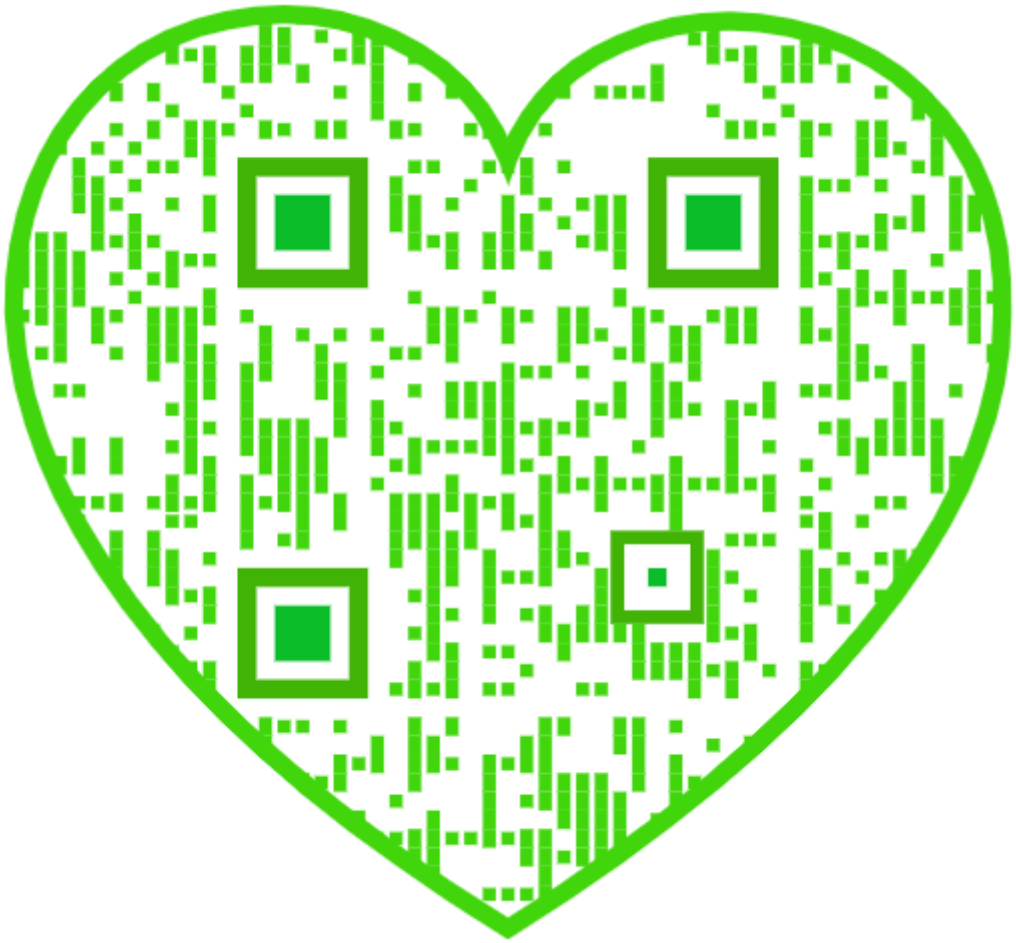

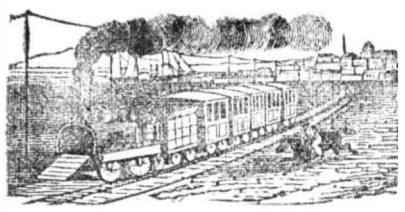

A word with our Contemporaries.

Since the commencement of the present vol. of the Scientific American we have been solicited by 900 different papers published in this and other countries for an exchange, and out of that number we have allowed to be entered in our books as such, over 700 papers and periodicals. The expense of furnishing such a large number of papers weekly, gratis, is quite a tax upon the Publishers, and that we may derive some benefit for so doing, we ask our Country Contemporaries to publish our Prospectus for Vol. 4, in their respective papers four times, which if done will entitle them to a copy of the Scientific American for one year and we will not require that they send us any papers in exchange. Many have volunteered to do so by publishing our prospectus as above specified, and those that have not or do not, before a new volume commences, must not feel disappointed if the Scientific American ceases its visits to their sanctums after the next number. Many thanks are due our kind contemporaries who have so frequently noticed us during the past year and it will be with regret if we are obliged to part with any of you.

Will Gas Explode.

If gas escapes in a confined room, and mixes with the air in the proportion of 1 of gas to 7 or 8 of air, it will explode. If in the proportion of 1 of gas to 5 of air, or 1 of gas to 14 of air, there can be no explosion. Before sufficient gas could escape in a room to cause an explosion, the inmates would be driven out, to avoid suffocation. A gas holder, filled with gas, cannot explode, because there is no air within. Gas will burn only when in contact with the air, otherwise when a burner in a house was lighted, the flame would rush back into the pipes—a thing that never happens. If you were to make a hole in a gasometer, and apply flame, the gas would burn quietly from the orifice, the same as from a burner. The New York Gas Company had a large gasometer destroyed on Wednesday last by the fire; it was filled with gas, yet there was no explosion.

These are facts well known to those who have made experiments in chemistry. The composition fluid or gas, as it is called, used for domestic purposes of illumination and from which so many sad accidents have happened, is only exploded when mixed with a certain quantity of oxygen. There need be no accidents but from the fluid evaporating and mixing with the atmosphere and communicating with the fluid in the lamp. For this reason camphene lamps should be perfectly air tight and have long wick tubes. It is not the flame catching the fluid that is the cause of an immediate explosion, for we have seen this take place twenty times without an explosion but let a certain quantity of the atmosphere be mixed with alcohol and turpentine in a gaseous state and that mixture ignited, an explosion is certain.

Washington National Monument.

We are happy to learn that the foundation of this structure is moving upward as rapidly as the nature of such a work will admit. It is eighty feet square, and of solid stone. The masonry is said to be so far, most skilfully and carefully executed, and promises to do great credit to all concerned in the erection of this magnificent memorial of the gratitude of the American people to the illustrious Father of his country.

Death of Mrs. Wilkes.

The Newport papers mention the death of Mrs Wilkes, the wife of Capt. Wilkes, who commanded the South Sea Exploring Expedition. She was spending the season at the Bellevue Hotel, and died during the absence of her husband in the South. Mrs. W. was the sister of Prof. Renwick, of Columbia College, and daughter of Robert Burns' celebrated Blue Eyed Mary.

New African Republic.

A benevolent gentleman in Cincinnati, has offered the Agent of the American Colonization Society, for Ohio, the sum of $2,000, for the purchase of a portion of the African coast, outside the present limits of Liberia, to to be paid as soon as the necessary arrangement can be made. His design is to offer the territory to the colored people of Ohio, Indiana and Illinois, for their acceptance, upon which to establish a new State, in connection with the Republic of Liberia. The Agent at Washington, Rev. Wm. M'Lain, recommends that the purchase be made northwest of Liberia, so as to include the Gallinas, and those other "darkest dens of the Slave trade." This purchase would embrace the the coast between the Republic of Liberia and Sierra Leone, and forever banish the Slave trade from that region.

A Deserted Palace.

The Royal Pavilion, so long the favorite abode of George IV., is now shut preparatory to its being offered for sale. Not a single individual is left to disturb the silence that reigns throughout the building. Every removeable article has been taken away, even to the grates, which have sold for old iron, the keys were delivered up to the Lord Chamberlain, for the purpose of being handed over to the Commisioner of Woods and Forests, who has now the possession of the property. So great was the hurry to lock up the place, that the few remaining workmen were obliged to finish the packing of the furniture upon the lawn.

High Life Amusement.

Two English gentlemen in high life have arranged a wager for one thousand guineas, that one of them shall sell one million boxes of lucifer matches in the space of two years, and not sell more than four boxes for one penny, and not exceed more than six pennyworth to any one individual; to commence on the 24th day of July, 1848, at York, and finish in Hull, 24th of July 1850.

They ought to be made to mount a four story ladder with brick for three years. That's the kind of work to take the aristocratic fun out of them.

A great piece of Art.

Geneva in Switzerland is certainly the place at which watches are brought to the highest perfection. M. Andre Liodet, who resides close to the Hotel des Bergues, has just produced a master-piece in this branch of the useful arts: it is a watch, which in size does not exceed in dimensions a five sous piece of France. This minute production is the result of seven years' application, and goes as correctly and as long as an ordinary watch. In 1843 M. Liodet had the honor of presenting to the king of the French several chef-d' œuvers, and among them a very small watch, which was admired by the whole court, though much larger than that now alluded to. Even at the present day we cannot comprehend how the Egyptians were enabled to move, raise, and place the enormous blocks of stone of which the pyramids are constructed. Will it be more easily comprehended how so many microscopic pieces have been so put together as to mark the time with a precision equal to the most complete and finished watch.

Ohio Iron.

Few persons are acquainted with the extent of the Iron interest in Ohio. It is now becoming a very important branch of manufacture and a large amount of capital is invested in the business. It has been steadily growing in Ohio for some years past. The great seat of iron manufacture of the State is in the neighborhood of Hanging Rock, on the Ohio River. Within a radius of 20 miles there are 30 furnaces. Twenty of these are in Ohio and ten in Kentucky. 60,000 tons of iron are anually manfactured by these furnaces.

Moving Buildings.

The moving and raising of buildings is a sight so uncommon and considered such a great feat in England, that one of the late numbers of the London Illustrated News had two or three engravings of a house that was lately moved in England. In Yankee land such things are common every day occurrences.

Thimbles.

The manufacture of many articles of daily use is the result of a series of labors that would surprise a person who had never given a thought to it. And very few imagine the amount of actual work expended on such articles. If a lady could see the process through which her thimble passed, from the solid bar of silver to the convenient instrument she uses, she would be astonished. The bar of silver is welded into a long ribbon, which is cut into small pieces, each piece to make the barrel of a thimble. The top is cut out of another strip of iron or silver.—The rim is hammered around a bar of iron and soldered, and after the top is soldered in, the whole thimble is placed on a turning lathe and chiseled inside and outside—it is then marked with the needle holes, by a little roller pressed against it and ornamented by various instruments.—We have omitted several of the processes through which it passes. Altogether they cannot be less than twenty, and after all the thimble is sold at a very small advance on the weight of the silver.

Turf Pressing Machine.

It is well known that many of the inhabitants of Ireland and Scotland depend entirely upon dried turf, or peat, as it is called, for fuel. This is just the vegetable productions of the bogs or mosses, cut with a peculiar kind of spade and dried in the sun. It is excellent fuel when well dried and the peasantry in the Highlands have their regular seasons for cutting, drying and carrying home their winter's peat. Three years ago, the people of Ireland and the West of Scotland experienced two great calamities from a wet season, viz. a blight of potatoes and the want of fuel. As necessity is the mother of invention we perceive that Lord Willoughby de Eresby has just secured a patent for an improvement on a machine for pressing turf on his estates in Scotland, so as to be somewhat independent of a wet season (no phenomenon there where it rains 364 days in a year.) It will be a a great blessing to the poor peasantry, who get the use of it for little or nothing. It is a subject of wonder that such a machine was not invented before. We are glad to see the lord fraternising with inventors, that is showing smartness enough to attain to such an honourable distinction. It is certainly a rarity.

The Power Loom.

The much boasted invention of the power Loom is not so modern as some suppose. It is related by G. Lancellotti, before the middle of the seventeenth century—that an engine that would weave four or five webs at a turn—that would move itself and work night and day, had been erected at Dantzic. But the invention was then suspended because it was feared that it would prejudice the poor people of the town.

Color.

Colors are only the rays of light reflected by different prisms. Two nearly colorless substances can make a most sparkling red, namely: sulphur and mercury. The sulphurate of mercury is a most beautiful pigment, vermilion.

The St. Louis Post and the Mystic Family.

We would just hint to our mystic brother, to be somewhat more generous in giving us credit for our original articles. We like the practice as well as the profession of F. L. and T.

The grains of minerals are so small in some rocks, as not to be distinguished from each other, and then these rocks are said to be *compact*. When the grains are distinguishable from their magnitude, the rock is said to be granular in its structure. When the parts composing the rock show plane and brilliant surfaces on being broken, they are said to be crystalline. Rocks are said to be slaty, or to have a slaty structure, when they split in their layers like common slate.

A boiler exploded lately in Albany, N. Y. injuring 4 men severely. It was owing to too great a pressure of steam—it was not supplying the engine at the time. The safety valve must have been useless.

Massachusetts the Starting Point.

Old Massachusetts has ever taken the lead in what is great, good, useful and profitable.—She established the first school in the United States, the first academy, and the first college. She set up the first press, printed the first book and the first newspaper. She manufactured the first cloth and the first paper.—She planted the first tree and caught the first whale. She coined the first money, and hoisted the first national flag. She made the first canal and the first railroad. She invented the first mouse-trap, and washing machine, and sent the first ship to discover islands and continents in the South Sea. She produced the first philosopher, and made the first pin. She fired the first gun in the Revolution, gave John Bull his first beating, and put her hand first to the Declaration of Independence. She invented Yankee Doodle, and gave a name forever and ever to the "universal Yankee nation."

And where is she now? Reaping the reward of her energy and perseverance. It is no exaggeration to state that the people of Massachusetts are at this moment better fed, clothed, educated and governed, than any other nine hundred thousand persons, taken collectively, on the face of the globe.

Fancy Telegraph Posts.

At Portsmouth, Ohio, the people have exhibited some classic taste in the erection of their telegraph posts. The posts which pass through the village are planed and painted, each of which is surmounted with an original design emblematic of the telegraph. On the top of one is an Indian mounted on a full-blooded mustang, bounding at the height of his speed, as if the bearer of some important intelligence. On another, which, stands opposite the post office, is perched a carrier dove, in seeming anxiety as regards the further disposition of the *billetdoux* that is attached to its neck. On a third may be seen a rider, mounted on the boiler of a steam engine, keeping far in advance of a streak of electricity, while his hat is left far behind streaming in the wind, and the hair of his head appearing to make several ineffectual attempts towards a "repeal of the union."

Destructive Crickets.

There has been great suffering among the Mormons at Salt Lake California, on account of a want of provisions, being obliged to kill their working cattle for food, and their stock of breadstuffs was nearly exhausted. Their wheat and barley crops have been entirely destroyed by crickets, which appeared in astonishing numbers, and, like the locusts, destroyed every kind of vegetation in their path.

The Famine in Newfoundland is disappearing before abundant harvests and productive fisheries. The Labrador fisheries have been very successful.

Lord Ashley has opened a poor man's library and reading room in one of the poorest parts of London, with courses of philosphical lectures, at a subscription of three half pence per week.

A vote was taken in the English House of Commons on the 9th of last month on the expedience of electing members by ballot. The motion was carried by a majority of 9 for vote by ballot.

There are now in this city alone over three thousand common groggeries. These spread misery and death around like the poisonous blasts from the Upaian vale.

It is perhaps not generally known that the great wooden Bridge of Derry in the North of Ireland, was erected by an American architect and American mechanics.

Forty eight seamen on board the American ship of war Jamestown, have been flogged in the short space of two months

The population of the United States is now estimated at 20,746,000, and the whole personal and real property at $8,594,560,000.

There were manufactured at Harper's Ferry, during the year ending 30th June, 1848, 11,000 percussion muskets, and 2,802 percussion rifles.

Doctor C. Morrill has made an aerial voyage in his balloon from Boston.

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For the Scientific American.

New York Salt Works.

In the centre of the Empire State, there is a mine of wealth in her subterranean salt springs. The manufacture of salt in this State has been the means of reducing its value throughout the United States. The Salt Works are situated near Syracuse, which, in 1820, consisted of one house in a swamp, is now a fine city, containing upwards of 15,000 inhabitants. It owes its prosperity to its advantageous situation and its salt works. Its salt manufacture has added vastly to its rapid growth in wealth and population. During the past few years the annual manufacture of salt has been from two and a half to three and a half millions of bushels. Three bores have been made into the earth to the depth of two hundred feet, the salt water is forced up by steam and water power into a building sixty feet above the level. It is then sent through pipes and bored logs to the different factories. The works extend five miles. It is manufactured in two ways, by evaporation and boiling. By the first method, the salt water is poured upon a broad surface 12 feet square and 6 inches deep, and thus exposed to the heat of the sun. Sliding roofs are prepared for all the evaporating works, by means of which the salt water is covered in wet weather. In dry seasons the vats "dry off" twice. The salt that remains is of the best quality. The particles are coarse and beautifully crystallized. The evaporating works cover a very large area, and from a distant spot they very much resemble a broad lake. But the greatest quantity of salt is made by boiling. There are from twelve to twenty large kettles in each building. They are kept constantly full of salt water, and a large fire is constantly burning underneath. The workmen under an intense heat, are employed in scooping the salt faom the kettles. After a little draining it is ready for market. Hundreds and thousands of barrels of this salt are packed weekly and sent to distant places.—The State enacted a law a few years ago, awarding premiums for all the salt shipped to tide water,—out of the State. This increased the produce and we believe for the general benefit of the State. The salt springs are not confined to the immediate locality of Syracuse, but extend to the East of Salina and to the West of Montezuma swamp. It is only around Syracuse, however, where the springs can be worked profitably.

At Liverpool, a short distance from Syracuse, a new salt spring, yielding a good article of brine, has recently been put in connexion with the old salt works. It is 100 feet deep, and is worked to the entire satisfaction of all the manufacturers.

Another is now in process of being dug a few rods west of the old Syracuse spring.—The pipe, seven-inch bore, has been sunk to the depth of 313 feet, with every prospect of finding an abundant supply of brine equal to other springs. This will soon be put in operation, which will make the number of springs from which brine is obtained for the manufacture of salt in that city and vicinity, as follows :—

Two at Liverpool, three at Salina, and three at Syracuse.

The seven springs in operation now, it is estimated will furnish 1,000,000 gallons of water in twenty-four hours, which will be increased by the new spring to nearly 2,000,000 gallons.

The salt business, is rapidly increasing.—The aggregate amount of salt manufactured between the first of January and middle of August last year was 1,673,894 bushels ; and during the same period of time this year 2,962,134 bushels, showing an increase of 388,240 bushels A ready market is found for all that can be manufactured and the demand for it increases as its good qualities become known.

The Poor of England.

From Parliamentary returns for 1847, it appears that the total number relieved during the year was one million seven hundred and twenty one thousand. Of this great number 500,000 were able bodied and could not get work. It is proposed in Parliament to lay out land in every parish to employ the poor who are able to work, in cases of being thrown out of employment. A good measure.

American Indian Corn.

After last year, there can be no doubt but more Indian corn will hereafter be exported from this country to Britain than ever before. Formerly as an article of export it was almost unknown. The people of England did not relish it,and were strongly prejudiced against it, from the fact, that in the scarcity of 1813, the corn sent to England was all heated and moulded and the people looked upon it as by nature musty. Last year by the process of Kiln drying, corn received in England was as sweet as when shipped in our harbours, therefore we may expect, that to dry our corn well, we will always have a market for it. But this preserving process must not be neglected.

The Philadelphia Ledger states that "at 25 cents the bushel for Corn at New Orleans, farmers generally in the valley of the Mississippi would be remunerated, and those immediately on that great river would make more money than by cotton at 6 cents. At 40 cents, the profit becomes important to the corn grower on the Ohio and its tributaries, the Cumberland and Wabash, while at 45 or 50 cents vast supplies would be drawn from a thousand different sources. The margin for shipping profit would be ample in either case, with a steady demand in Europe, unless, as it sometimes happens at New Orleans, freights should run up to an unreasonable figure. The capacity of the West for the production of this grain is incalculable. Soon after the subject first excited attention in England, the question was asked by an officer of the British government how much Indian corn the West could spare to his country. The reply was, "send your order to any single State bordering on the Mississippi, and you will get all you want." Tennessee alone produces about eighty millions bushels.

America is the Grainary of the world and her agricultural products are the source of England's wealth. In her cotton fields she holds the keys of England's power and in her corn fields who cannot behold a source of supply to render her the feeding as well as the clothing provider for her mother land.

Sumac.

This is a stringent shrub used for the purposes of tanning and dyeing. The best quality comes from the Island of Sicily and costs the United States no small amount yearly, as great quantities are used for the purposes mentioned. The plant or shrub, is a native of America and we do not see why it might not be cultivated both successfully and profitably, especially in some of our Southern States. It grows best in warm sandy soil. It requires a few years after planting to produce full crops—stands 10 or 12 years after planting until it requires new planting, hence a regular series of planting is easily kept up. It requires very little labour to prepare the land or cultivate the crop—can be gathered in by any sort of hands—crop steady and sure. It is prepared for market by grinding leaves, &c. at small cost.

Domestic Architecture.

There are those who are mourning over decline and full of splendid architecture,—who are continually grumbling at the want of modern genius in the erection of buildings. But although the ancients surpass the moderns in the splendour of design—the beauty of form and the harmony of parts—yet we far surpass them in the more essential parts,—comfort and convenience. This is especially true in regard to the dwellings of the working classes All the ancient gorgeous temples and glittering palaces were the contrast to miserable hovels, fit only for beasts of burden. A better day has now dawned upon the world, and as evidence of the reform in the condition of the working classes, we have the finest demonstration in the houses which are now being built, or rather the comfortable houses in which they now reside, in comparison with the wretched abodes which in the past ages were the dwellings of the labouring classes. There are great improvements yet to be made, science aided by the important consideration, "that the working men are now something" will yet cause a greater advance in this all important constituent of human happiness.

The best way to make Butter.

Mr. Bement of Albany, N. Y., a practical farmer and Editor of the Journal of Agricultural Science, says that the best way to make the greatest quantity and the best butter, is to strain the milk as soon as milked and keep it in a temperature airy and dry of about 55 or 60 degrees and churn at that heat—never much below nor above. The greatest quantity of cream and butter which Mr. Bement ever obtained from the least quantity of milk was treated as follows.

The pan into which the milk was strained, was four inches deep and flaring. Another made six inches deep and and nearly straight in the sides and just large enough at the top to recieve and embrace the upper pan, within half an inch of the top, and it should fit tight, so that little if any of the steam will escape. A small tube was soldered near the top of the under pan for the admission of hot water, and a small hole was made on the opposite side for the escape of the air while pouring in the hot water. The first made was soldered together at the top, but was found difficult to wash and dry; being separate, they can be washed and dried without difficulty.

The milk was strained into the upper pan and left at rest for 12 hours ; then the same quantity of boiling water was introduced into the under pan and suffered to stand 12 hours longer, when the cream was found perfectly separated and of such consistence that the whole might be lifted off by the fingure and thumb.

The cream was churned immediately after skimming at a temperture of 58° In this manner first quality of rich yellow butter was obtained in 15 minutes, in the month of March. Under the ordinary treatment, much less butter would have been obtained, and of a white color, insipid, without flavour and unfit for table.

The proper degree of heat for churning is most beautifully regulated by Crowell's Thermometer Churn—a very fine yankee invention of the old Commonwealth and highly spoken of. It consists in having a separate chamber for hot water, or cold, as may be needed to bring the cream to its proper churning degree regulated by a thermometer,—an infallible test.

Energy and Mind.

Energy is every thing. How mean a thing is man with little motive power! All the abilities nature has given him lie useless, like a great and mighty machine, ready at every point for useful action, but not a wheel turns for want of a starting power. A great man is like a great machine. He has a great power to set in motion the various and immense projects which he has in hand ; little motives can neither start nor stay him, they may set in motion the powers of an ordinary man, and render him a respectable. nay, even a beautiful piece of mechanism, but never a magnificent one.

Yet there is one thing which renders man supremely above the machine. By the working of his own mind he can improve and exalt himself ; by directing his eye to what is great and good, he may become so. If then we become what we wish to be, what high objects should we aim at and what resolute and energetic efforts should we ever be making to attain them !

The Fakeers of India.

Each one of these beings seemed to be more revolting than the last. They are, for the most part, young men, and their life is one of ease and good cheer ; for, in every place their impudence procures them money. Their raiment, when, indeed, they have any, is a cloak of orange color ; their face is smeared over, as is the whole body, with ashes, which gives them a horribly cadaverous hue ; their hair, long and dishevelled, is either dyed a pale reddish brown, or covered with a wig formed of tufts of camel's hair, and powdered with ashes; not unfrequently moreover, they put on the top of this, by way of an additional head-dress, their iron pot or stewpan! Many among them carry a sort of guitar with wire chords, or a hand drum. They invariably act the part of tyrants towards the poor ; often have I seen them busily inspecting the baskets of the heavy laden bearers, and appropriating to themselves their victuals.—*Cox.*

Preserving Newspapers.

One of the many things which I have to regret, says a correspondent of the British Banner, when I review my past life, is that I did not, from earliest youth, at least as soon as I was able to do it, take and preserve some good newspaper. How interesting would it be now to a sexagenarian to look into the papers which he read when he was twelve of sixteen, or twenty years old ! How many events would this call to mind which he has entirely forgotten ! How many interesting associations and feelings would it revive !—What a view would it give of past years !—What knowledge would it preserve by assisting the memory ! And how many valuable purposes of a literary kind, even, might it be rendered subservient to !

How much do I wish that I could look into such a record when composing this short article ! But newspapers are quite different things now from what they were sixty, or even twenty years ago. They are unspeakably more interesting and valuable ; in this respect, at least, (I believe in many others,) these times are better than the former. Formerly the editors of newspapers were obliged to strain their wits and exhaust their means in order to obtain matter to fill their pages —Now the great difficulty is, to insert all the valuable interesting materials that are poured upon them from every part of the world, and from every grade and phase of society. Now, newspapers contain many of the best thoughts of the most highly gifted men, on the most momentous subjects, and their reports of current events are among the most reliable, and will furnish an inexhaustable fund of entertainment to the end of life.

Taking a Shower Bath.

Doctor.—Well, how did your wife manage her shower bath, deacon ? Deacon.—She had real good luck. Madame Mood told her how she managed. She said she had a large, oiled silk cap, with a cape to it, like a fireman's that came all over her shoulders, and—Doctor.—She's a fool for her pains—that's not the way. Deacon.—So my wife tho't. Doctor.—Your wife did nothing of the sort, I hope. Deacon —Oh, no, doctor, she used an umbrilly. Doctor.—What, used an umbrella, what the mischief good did the shower bath do her ? Deacon.—She said she felt better. Her clothing did not get wet a mite. She got under the umbrilly for half an hour, till all the water had trickled off, and said 'twas cool and delightful, and just like a leetle shower bath in summer. Then she took off her things ; and rubbed herself for half an hour after.

Jokes.

A joke may change the most resolute will of the most ferocious tyrant. All know how despotic and ferocious was Henry VIII., of England. He, having some motives for discontent with Francis I., of France, sent to him, as Ambassador, an English Bishop, whom he wished to charge with a message full of gall, pride and menace. This prelate, perceiving all the peril of his mission, sought to excuse himself. Fear nothing, said Henry to him, since if the King of France should take your life, I will cut off the heads of as many Frenchmen as I can lay my hands on. True, replied the Bishop, but among all those heads there would not be one that would fit my bust as well as the one which is there now ! This jest made Henry laugh, and ended in causing him to change his resolution. Without this, perhaps England and France would have written the history of another war.

Make your Beds Young Ladies.

When you leave school take care of your chamber. It is a good plan to strip the clothes off your bed and make it up as soon as you rise from it; by doing it then you can protect your hair from lint and feathers, and being lightly clothed, your movements are perfectly free, and the glow occasioned by exercise makes you on a cold morning feel less dread of cold water. You can finish making your bed and dust your furniture after you are dressed ; and before breakfast if there is time; but if not, return and do it as soon as possible after the meal is over.

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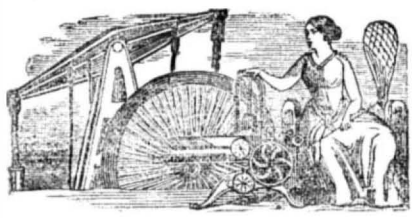


New Inventions.

Peck's Improved Door Spring.

The best spring that we have ever seen for doors is one invented by Mr. Thomas Peck of Syracuse, N. Y. who is now in this city for a short time, to introduce his invention —It is so made that the tension of the spring can be regulated for the lightest and heaviest doors by simply screwing up or loosening a barrel spring, which is encased in a small iron box and fixed on the door. Through the middle of this box there passes a spindle to which one end of this spring is fastened, and the other end is fastened to the side of the box. This spindle has two square shoulders, so that the spring may be transferred in a minute to answer for a right or left hand door. The traveller is a small (with a pulley on one end of it,) which is fitted upon the shoulder of the spindle and the pulley by the opening and closing of the door, moves along a stationary curved rail fixed on the lintel of the door. This curved rail is so shaped that the door is made to move quite free, having the speed regulated to prevent jarring, &c. One can be seen at our office.

New Corn Sheller.

Quite a number of Corn Shellers appear to have been recently invented and among the rest we percieve one named Gordon's, which has recently been exhibiting in Louisville, Ky., and praised as being superior to all others for a hand machine. It is made to clean the corn, separate the cob and impurities from the clean, and measures the quantity it shells in a sack filling it up as discharged from the spout.

Machine for Reducing Wagon Tyres.

Some of our Western exchanges speak highly of a machine recently invented by Mr. W. Matthews, a blacksmith of Green Co., Illinois, for reducing the size of wagon tyres, bands, &c., cold and without cutting and rewelding. We are not in possession of a description so as to understand it fully, but if it accomplishes what it purposes, it must be valuable indeed.

Harness Relief Spring.

The Maine Farmer states that Mr. S. Spokeman has invented a new way to relieve sudden jerks and weight upon horses' backs, which we consider to be an excellent thing. Under each shaft is fastened an elliptic spring, the centre of which is connected to the lower ends of the staple, which passes freely through a hole bored in the shaft and connects with the chain that passes over the back. This affords relief to the back of the horse, by letting the load come down gradually and gently at each jolt, and not suddenly and violently as in the common mode.

New Method of Engraving.

Two Germans in Philadelphia have discovered, it is reported, a new method of engraving upon stone, said to be simple and good.—The design is first to draw upon stone, then submit it to the action of a chemical preparation which eats in the pencilled design in a few hours; the engraving is stereotyped in the usual manner and blocked ready for use.

This invention will not affect wood engraving yet, for it is very evident that the stone will require touching with the graver also

Munger's Water Wheel.

We have been informed that the water wheel of Hiram Munger, of Manchester, N H, is rapidly finding its way throughout the United States, and giving great satisfaction.—Mr. Munger took the proper course of publishing his invention in the Scientific American, and thus bringing its merits before the public.

BOOK BACKING MACHINE.

The art of Backing Books is one of no small physical labor when performed by hand, and it is one which is both tedious and troublesome. To lessen this severe labor on the one hand and to quicken the operation on the other, so as to produce work at a cheaper rate, and equally as good as by hand, Mr. William Leighton, of Portsmouth, N. H., invented and patented the machine which we here introduce to our readers.

The nature of the invention consists in a sliding horizontal bed or plate having a rack on its under side worked by a cog pinion on an axle. The books to be backed, or rather to have their backs pressed and formed—are placed on the book bed, then covered with a platten plate and carried under pressure rollers and submitted to a severe downward pressure close to the book backs, while at the same time a grooved circular plate pressed by a spring is carried along with the horizontal book bed, pressing the backs of the books sideways, giving them the particular form desired, pressing out all the wrinkles and doing more work than four men, and can be attended by a boy or girl.

Figure 1.

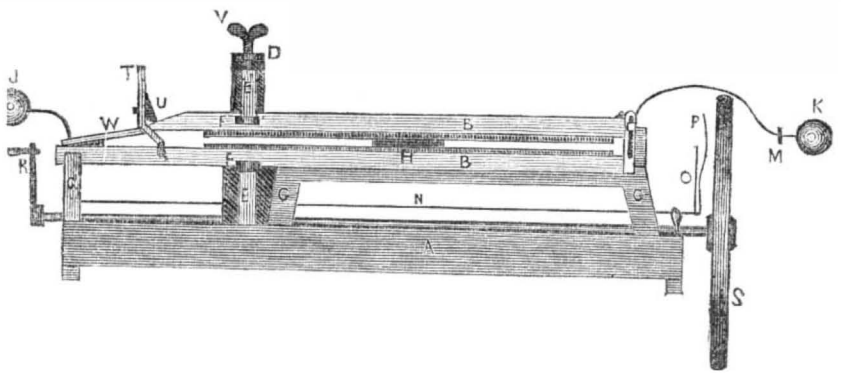
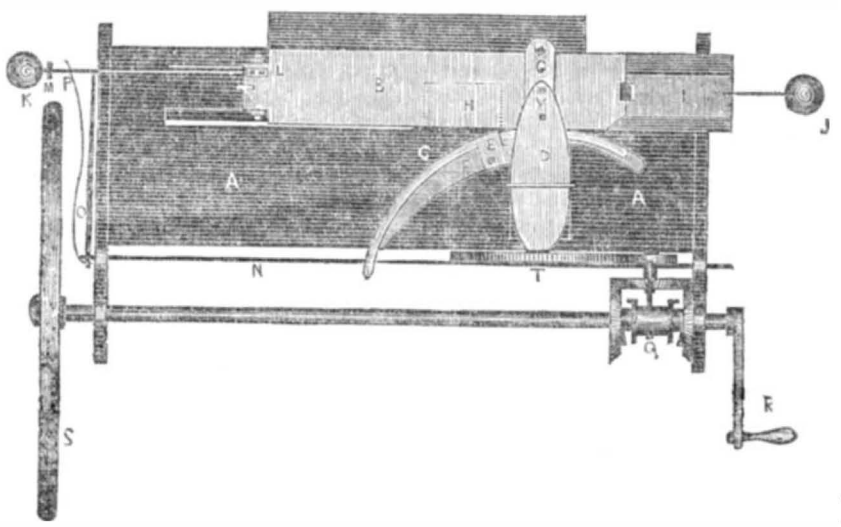


Fig 1, is a front elevation. A, is a bed plate made so as to be screwed upon a table. B B, is the platten and book bed. The platten is represented as covering a book H, placed between the book bed and it. K, is a weighted lever on the end of the platten, which, when the platten is not under the pressure rollers weighs one end down and the platten opens up like a jaw so that the books may be taken out or put in. The book H, is now represented as being carried under the pressure rollers which are placed in the inside of a strong cross head D, which will be better understood by looking at fig. 2. V, is a screw, one or more may be used for regulating the distance or space between the pressure rollers and the book bed—and thus regulate also in a very simple manner the pressure required for each size of book. E E, are two standards, the one fixed on D, and the other on A. F F, are two friction wheels which roll upon and press the side of the platten and the book bed. G G G, represent an elevated railway for the book bed to slide on with its rack in the space between the two rails. R, is the crank for moving the main shaft, and S is a fly wheel on the other end of it. N, is a clutch rod for changing the motion of the book bed, carrying back the book when sufficiently pressed (self acting.) This is done by M, a nut on the lever of the platten, which can be set at any point, and which as the book bed and platten is carried under the pressure rollers the desired distance, strikes P O, a spring on the clutch rod, and the pinion which moves the rack is reversed in motion, likewise the book bed. U T, is a catch for holding the platten down upon the book and the distance to catch is regulated by a set screw so as to suit any thickness of book. W J, is a small weighted lever which can be shifted at pleasure for holding the catch. There is another kind of catch, however, which dispenses with the use of the weight and lever J W.

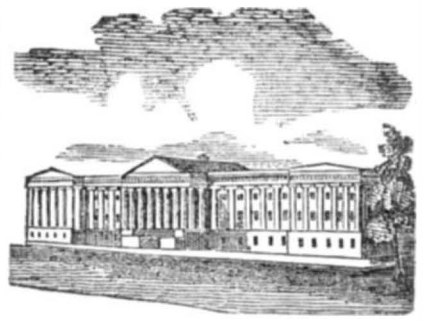
Figure 2.



This is a top view or ground plan. It shows the mode by which the horizontal book bed is changed in motion by the clutch rod N, when struck by the nut on the end of the platten, shifting the clutch at Q, and reversing the motion of T, which drives the pinion shaft that operates the rack on the lower part of the book bed. This manner of shifting or reversing the motion is well understood by any mechanic. A A, is the bed plate, and D the cross head, in the inside of which are the pressure rollers. This view shows the form of the cross head. V, is the regulating screws seen best in Fig. 1. G, is the lower part of the cross head, in which the friction wheels are placed. The pressure rollers can be shifted up and down by a set screw as may be desired—in fact every item seems to have been considered by the inventor to make this a perfect machine. C, is the grooved circular plate that forms the back of the books. F, is a curved rail on which it slides in the inside of a guide E, where there is a spring with its tension towards the back of the book pressing the grooved plate. This circular backing plate catches the back of the book or books and moves along with the book bed and platten under D. There are different grooved plates which can easily be shifted to suit every size of book.

The book or books to be backed are placed on the book bed and covered with the platten, then they are carried under the pressure rollers, and the book backed and finished. This machine will no doubt entirely supersede hand labor, and come into general use.

Munn & Co. are the appointed Agents for the sale of rights. All information desired of price, construction, sale, &c., can be obtained by addressing letters, post paid, to this office. Those who wish to make a good and profitable investment in a really valuable patent, have now an opportunity of no common kind presented to them.



LIST OF PATENTS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending August 29, 1848.

To William and Thomas Schnebly, Hagerstown, md., for improvement in Rotary Steam Engines. Patented August 29, 1848.

To John Anderson, of Phœnixville, Penn, for improvement in machinery for straightening Rail Iron. Patented August 29, 1848.

To J. and C. Beach, of Canton, Conn., T. Beach, of Springfield, Mass., and W. G. R. Mowry, of Smithfield, R. I., for improvement in machinery for cutting and preparing flax, &c. for Carding. Patented August 29, 1848.

To James Bogardus, of New York City, for Sun and Planet Horse Power. Patented August 29, 1848

To John Mackey, of Napanock, N. Y., for improvement in machinery for dressing Axes, &c. Patented August 29, 1848.

To William Fife, of Philadelphia, Penn., for improvement in Metallic Pens. Patented August 29, 1848.

To Francis Kelsey, of New York City, for improvement in Mill Stones. Patented August 29, 1848.

To William Easby, of Washington, D. C., for method of converting fine coal into solid lumps. Patented August 29, 1848.

To Henry Clark, of Eufala, Ala., for improvement in the Cotton Gin. Patented August 29, 1848.

To John and Thomas McLaughlin, of Kensington, Penn., for a method of converting rectilinear into rotary motion. Patented August 29, 1848.

To George Dryden, of Worcester, Mass., for improved Turn Table, (for Railways.)—Patented August 29, 1848.

To Abel Hawley, of Milwaukie, Wisconsin, for a Floating Excavator. Patented August 29, 1848.

To James Maull, of Philadelphia, Penn., for improvement in the manufacture of Canvass for Sails. Patented August 29, 1848.

To Horatio Allen, of New York City, for improved Cut-off. Patented August 29, 1848.

To Jordan L. Mott, of New York City, for improvement in Cooking Stoves Patented August 22, 1848.

To Cornelius Hurst, of New Orleans, La., for improvement in Steam Cotton Presses.—Patented August 22, 1848.

To Collins Co., assignee of Elisha K. Root, of Collinsville, Conn., for improvement in machinery for Dressing Axes. Patented August 22, 1848.

DESIGNS.

To Whitney and Montayna, assignees of James H Conklin, of New York City, for Design for Stoves. Patented August 22, 1848.

To Thaddeus Fairbanks, of St. Johnsbury. Vt., for Design for Pedestal for Balances. Patented August 29, 1848.

To A. C. Barstow, of Providence, R. I., for Design for Stoves. Patented August 29, 1848.

To Charles W. Warnick, of Philadelphia, Penn., for Design for Stoves. Patented August 29, 1848.

Particular Notice.

Readers of the Scientific American are referred to an advertisement of our Patent Agency which will be found in another column.

Engine attached to the Boiler.

We have for sale a new and beautiful two horse engine and boiler, made in the most compact and substantial manner. The engine is attached to the boiler and is moved with it. Such is its compactness that the whole could be lifted on to a cart and fired up. We will dispose of it for the small sum of $250.

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NEW YORK, SEPTEMBER 9, 1848.

To Our Subscribers.

The next number will complete the third volume of the Scientific American. We therefore take the present opportunity of calling the attention of our subscribers to the forwarding of their subscriptions for the next volume. We are indebted to you generally for the interest manifested in the success of a paper devoted to science and the arts, and for the exertions many of you have made to extend its circulation, by not only subscribing yourselves but inducing your neighbors to do so likewise. We repose confidence in the intelligence of our readers and their devotion to useful information for extending the circulation of our paper still further among the twenty millions of inhabitants of these United States. Our next volume will be a real Encyclopedia of useful and instructive information—a paper unequalled for richness of illustration, practical knowledge and useful information. Volume 4, will contain a history of the Rotary Steam Engine, illustrated with more than fifty fine engravings. We will also publish a number of Essays, by an eminent chemist. Our usual varied stores of new inventions will still claim our special attention, and yours too respected friends, for it is to the Scientific American that the manufacturers now look for what is new in the inventive world, and the inventors of the United States and many in Europe look exclusively to our columns as the best means of spreading abroad a knowledge of their inventions.—This is the reason why we have been enabled last year to publish the engravings and descriptions of more varied and useful machines than can be found in all the mechanical works ever published in our country put together.—The simple engravings and descriptions of useful machines contained in this present volume are worth themselves the full price of the year's subscription. Every person is aware of this fact, who knows any thing at all about the difficulty and great expense of getting such kind of information.

We have been highly gratified with the many flattering letters and testimonials sent to us respecting the continued improvements we have made in the Scientific American.—Every person can easily perceive this who will compare our present, with the past volume. We promised this at the commencement, and our friends have generally borne testimony to the faithful fulfilment of our engagements. Respected subscribers, much of this is due to you. You have extended our circulation and enabled us to publish a paper unequalled in real usefulness. Those who take the Scientific American do not find it, after reading its contents, "like a tale that is told." It is a standard work of American and other useful inventions and discoveries, and a bound volume is both stock and interest of the subscription money. Not a copy of our first volume can now be purchased, and to our subscribers we would say, send in your subscriptions now and endeavor to get your neighbors to subscribe also, for we do assure you that the next volume of the Scientific American will be the best book of new and useful inventions, mechanism, chemistry, and all useful information for the man of science, the manufacturer, the mechanic and every other person, ever published in the world.

The Commissioner of Patents.

The Committee of the House of Representatives to whom were referred the charges against the Hon. Edmund Burke, preferred by Dr. Clinton, made a very excellent and full report, which is too long for our columns, but to show our inventors the confidence that may be placed in the Patent Office, we publish the following extracts of the report, which speak well for the honor of those who superintend the Patent Office business:—

"In regard to the general averment, that the whole of the twenty-one charges are tantamount to charges of fraud, bribery, corruption, embezzlement, felony and malfeasance in office, after a laborious investigation, the committee have no hesitation in saying that there is an entire failure of evidence to sustain the allegation.

"There is not even ground for suspicion of want of integrity in any particular. The committee cannot close this report without bearing testimony to the fidelity with which the duties of the office have been performed by the Commissioner, the Examiners and Clerks. Many of the causes of complaint arising from the accumulation of business, it is believed, will soon be removed by the examining corps, under the recent act of Congress increasing it.

"The committee also report the testimony, and offer the following resolution:

"Resolved, That the committee be discharged from the further consideration of the subject."

The Empire State.

The State of New York has now a population of two and a half millions, and it is the great highway of the internal travel of the United States and Canada. By means of its rivers, canals and railroads it is linked to the great lakes, the heart of the mighty West and the North, and is the channel through which the vast productions of those regions must pour an ever increasing tide. There are over 700 miles of canal, and about the same amount of railroads and telegraphs in the State.

Its imports amount to over sixty millions of dollars per annum, or more than half the imports of the United States, and the value of its manufactures is not less than thirty millions. Its shipping is nearly a half a million tons, and more than three hundred steamers traverse its waters. It has upwards of ten thousand school districts, with well appointed schools; one University, five Colleges, upwards of seventy Academies, and one Military Academy.

The City of New York is the centre of Art and Commerce. To it comes the mechanic with his new machine, the merchant with his new cloth, and the farmer with his new crops. Here can be found congregated the citizens of all nations. The Chinaman and the Malay may be daily seen in our streets. The Turk and the Greek walk through our marts and the languages of Europe, Asia, Africa, and America, are spoken in our midst.

Whatever is new is sure to be soon heralded forth among us, and frequently we are acquainted with new discoveries made thousands of miles distant, even before the said discoveries are known to the denizens of the regions where they were made.

How shall I bring out my Invention?

This is the enquiry of almost every inventor as soon as an invention is completed, and in answer we would say that the *best course* to bring out an invention, is to publish an *engraving* and description of it in the *Scientific American* as soon as possible. This paper has the most extensive circulation of any Mechanical paper in the world, and the owner of an invention by thus showing his discovery to so many mechanical readers is sure to derive immense benefit therefrom. It secures to him the credit and profit of the invention, enables him to dispose of machines, rights, &c. together with many other advantages.—We repeat, that the *first step* in bringing out an invention should be to *publish an engraving and description of it in the Scientific American*. Nearly all of the best inventions which are patented at Washington are now illustrated in this paper, and those who have never had their machines published should neglect it no longer.

Water as a Lubricator instead of Oil.

We believe that it is not generally known, although noticed by us some time ago, that a patent has been granted for a new method of using water in place of oil, for axles, shafts, &c. The inventor is Mr. P. S. Devlan, an ingenious machinist of Reading, Penn., and his invention has been faithfully and successfully tested, and has been used for some time with great satisfaction in the fur cutting factory of J. W. Cochrane & Sons, Brooklyn, N. Y. When used on a railroad car, the water is applied by means of a box screwed to the truck of the car, containing the water and a small wheel armed with buckets, which is pressed against the axle by spiral springs.—The revolutions of the axle turn this wheel, which throws the water over the journal in a constant stream, thus affording a means of lubrication, at once easy and uninterrupted.—When oil, which is a non conductor of electricity, is used on journals, the fluid passes from their surface to the centre, producing, in a short time, an entire change in the iron, which becomes very brittle and easily broken. This is the opinion of the Scientific Pambour. Water, on the other hand is a good conductor, and when used in the place of oil, it carries off the electricity from the surface of the journals, and thus preserves the iron from any injurious changes. This is one of its advantages, while economy is another and a great one. Iron boxes are used in place of the old brass kind, and answer as well, while they cost but one fifth of the expense and the saving in oil is no small item.

When this invention is applied to shafting, the hanger is cast hollow and placed beneath the journal as a reservoir for the water. In that is the small wheel that is pressed up against the journal. As the shaft revolves the wheel turns with it and lifts the water from the reservoir, keeping the journal perfectly cool all the time. This invention is highly praised by those who have used it, but it has been introduced to but a few places yet. Mr. S. C. Hills, whose advertisement is on another page, is agent for it in this city.

Steam Navigation of the Pacific.

The line of mail steamers between New York and New Orleans, by way of Havana, with its branch to Chagres, will soon be in operation. The arrangement is to connect with the mail line on the Pacific from the Panama to the Columbia river. This service is to be performed by a steamer touching at San Blas and Mazatlan in Mexico, and at some of the principal ports in California, until it arrives at San Francisco. Thence another steamer takes the mails and passengers to the Columbia. The whole distance from New York to Oregon, between five and six thousand miles, will be performed in little more than thirty days. Some of the Government steamers are now fitting out for the Pacific, to extend the mail communication to the Sandwich Islands, and it is contemplated ultimately to comprehend China in the system. It is supposed that the Sandwich Islands may be reached in forty days from New York. The service will be arranged with reference also to a connection with Wheelwright's line of British steamers on the Pacific coast of South America.

The Government pays $490,000 a year, for a monthly mail, by this route between New York and the Columbia river, and a semi-monthly mail between New York and New Orleans by way of Charleston, Savannah, and Havana. The contract is for ten years. The steamers are all constructed under government inspection, with a view to their employment, when required, as vessels of war.

One of the Pacific steamers is in such a state of forwardness, that she will be despatched to her destination in October next, and two more will follow her successively at intervals of one month each. The whole line between New York and Oregon is expected to be in operation next January.

Twelve horse Engine and Boiler.

Any one wanting a splendid engine and boiler of the above power for a sum far below their cost will do well to read the advertisement offering them for sale, which appears in in another column. We will warrant both engine and boiler to be of the very best kind in every particular, and we can only add that the purchaser will be a fortunate individual. All the pipes are included.

Patents Granted.

Our readers will perceive that the Patent Office has made the work fly this week. No less than 17 Patents were granted. Three patents were granted to inventors in this city, and four to inventors in Philadelphia, allowing Kensington to be part of it. We perceive that our friend, Mr. Clarke, of Eufala, Ala., has secured the patent for his Eureka Cotton Gin

British Cotton Factories.

In the city of Glasgow there are 42 cotton factories containing 18,000 looms, and employing on an average 12,000 females and 1500 males. A year ago twelve of these factories were idle and nearly all the rest on half time. Now only five are idle and all the rest are on full legal time, 10 hours per day. The wages have been reduced 10 per cent for decrease in the hours of labor, but the operatives prefer this, and it is calculated that the wages will gradually rise to the old standard, by an understanding among manufacturers to raise a little on the price of goods. This is the latest news, so that it seems while our factories here are stopping, trade is getting better across the big herring pond. All the spinning factories are working full time.

Cotton Factories of Pennsylvania.

The cotton factories in Pittsburg and Allegheny City, that were recently stopped by a strike of the operatives, in refusing to work more than 10 hours per day according to a recent law, have all again we believe, commenced operations on the ten hour system.—The wages of the operatives, however, have been reduced generally 16 per cent. We would recommend a Convention of our manufacturers from all the States to be held and unite upon a universal 10 hour system. At present neither Pennsylvania nor New Hampshire can cope with other States that work 14 hours. This is not fair play. Manufacturers can remedy this, and 10 hours is just as profitable to one as the other, if fair prices can be secured, and surely this is not impossible.

The Franklin Institute Philadelphia.

The Exhibition of the Franklin Institute for the promotion of the Mechanic Arts, will open to the public on the 17th of October, and continue till the 19th. The room will be prepared for the reception of goods on the 13th of the same month. Mechanics and others are requested to send their productions early in order that the arrangement may be perfectly in time for full display of the progress of the Mechanic Arts of the country.

Disease and Electricity.

A letter from Petersburgh July 13 mentions an interesting fact, in connection with the appearance of the cholera in that city. When the cholera broke out there, the air was so peculiarly changed, that no electrical machine would produce a spark, and a magnet which before then had sustained a weight of 12 lbs. would scarcely raise 4 lbs.

It is perhaps useless to say, that some other circumstance besides the presence of cholera, was the cause which affected the magnet.

Unprecedented Demand for Old Papers.

At the commencement of the present volume of the Scientific American we had nearly one thousand complete setts of the preceding volume on hand. Since that time we have had 500 copies of those setts bound, and the balance have been ordered by mail and sent in sheets. We are now obliged to inform our patrons that we are unable any longer to furnish *complete* setts in sheets, and that we have but fifty more copies left, which are bound. The price of the remaining fifty copies which are left will be hereafter $3 per copy (neatly bound,) or we can furnish a few more copies in sheets, minus Nos. 1, 10, 16, 17 and 46, at $2 per sett. All the numbers of the third volume can be had yet, at the subscription price.

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Arts, Manufactures and Machinery.

Copying by Turning.—Impressions from the same piece of Copper plate.—Stereotyping and multiplied Copying.

The Art of turning might perhaps itself be classed among the Arts of Copying. All work which is executed on a mandril partakes in some measure of the irregularities of that mandril, and the perfect circularity of section which ought to exist at every part, can only be ensured by an equal accuracy in the mandril and its collar.

Some very singular specimens of an Art of Copying, not yet made public, were brought from Paris a short time since. A watch-maker in that city name of Gonord, had contrived a method by which he could take from the same copper plate impressions of different sizes, either larger or smaller than the original design. Four impressions of an Eagle were examined by a late artist equally distinguished for his skill and for the many mechanical contrivances with which he enriched his Art The largest was four times the superficial size of the smallest, and no lines were detected in one which had not corresponding lines in the others. There appeared to be a difference in the quantity of ink, but none in the traces of the engraving. The processes by which this regular operation was executed have not been published, but two conjectures were formed at the time which merit notice. It was supposed that the artist was in possession of some method of transferring the ink from the lines of a copper plate to the surface of some viscous fluid, and also of transferring the impression from the fluid to paper. If this could be accomplished, the Print would be exactly the same size as the copper from which it is derived; but if the viscous fluid were contained in a vessel having the form of an inverted cone with a small aperture at the bottom, the liquid might be lowered or raised in the vessel by gradual abstraction or addition through the apex of the cone ; in this case, the surface to which the printing ink adhered would diminish or enlarge, and in this altered state the impression might be retransferred to paper. It must be admitted, that this conjectural explanation is not without considerable difficulties, for although the converse operation of taking an impression from a liquid surface has a parrallel in the Art of marbling paper, the possibility of transferring the ink from the copper to the fluid requires to be proved.

Another and more plausible explanation is founded on the elastic nature of the compound of glue and treacle, a substance already in use in transferring engravings to earthenware. It is conjectured, that an impression from the copper plate is taken upon a large sheet of this composition ; that this sheet is then stretched in both directions, and that the ink thus expanded is transferred to paper. If the Copy is required to be smaller than the original, the elastic substance must first be stretched, and then receive the impression from the copper plate: on removing the tension it will contract, and thus reduce the size of the design. It is possible that one transfer may not in all cases suffice, as the extensibility of the composition of glue and tracle, although considerable, is still limited.

Perhaps sheets of Indian rubber of uniform texture and thickness may be found to answer better than this composition. As it would require considerable time to produce impressions in this manner, and there might arise some difficulty in making them all of precisely the same size, the process might be rendered more certain and expeditious, by performing that part of the operation which depends on the enlargement or diminution of the design only once ; and, instead of printing from the soft substance, transfering the design from it to stone thus a considerable portion of the work would be reduced to an Art already well known, that of Lithography.

Stereotype plates are Copied, by the Art of casting, from moulds formed of plaster of Paris.

Those moulds are themselves Copied by casting the Plaster in a liquid state upon the moveable type set up by the compositor.

[It is here that the union of the intellectual and the mechanical departments takes place. Through how many stages of repeated Copying the matter which is here delivered to the reader may have travelled, we shall leave involved in a veil which his sagacity may be penetrated ; merely observing, that in numerous instances the metal far outruns the mechanical Copyist.]

These moveable types, the obedient messengers of the most opposite thoughts, the most conflicting theories, are themselves Copies, by casting from moulds of copper called matrices.

The lower part of those matrices bearing the impressions of the letter or character intended, are Copies from punches on which the same character exists in relief.

These steel punches are not themselves entirely exempted from the great principle of Art. Many of the cavities which exist in them, such as these in the middle of the punches for the letters *a, b, d, e, g,* &c. are produced from other steel punches in which these parts are in relief.

In every department of Manufacture, the principle of Copying contributes to the uniformity and the cheapness of the work produced.

For the Scientific American,

The West and Rural Villages.

The Western Prairies are vast rolling plains which indicate the certainty of alluvial deposit, and seem to favor the idea that the northern part of our globe was not so elevated at one period as it now is. There can be no doubt but the valley of the Mississippi was once the bottom of a boundless inland sea, and was prepared gradually to lift its head above the waters, to afford a place for man to dwell on and rear up cities more mighty than those on the plains of ancient Asia, or modern Europe. The Prairies are rich in agricultural productive qualities—generally having a soil three and four feet deep. The State of Illinois alone, has agricultural capacities to feed comfortably 60,000,000 inhabitants. It will no doubt be long before she has such a population, if ever, but if ever she has, they will not need to starve, if the sun shines and the rain falls. At present the population on our prairies is sparse, but every year there cometh new settlers to break up the fallow ground. It is really a curiosity to see a new settler enter with his plough upon the unbroken bosom of the broad prairie. A break up plough is a huge strong machine adapted by Yankee ingenuity for the very purpose of "clearing the way." Five and six yoke of strong oxen are attached to the huge instrument. The mould board is about an inch thick, the share of the thickness of a two inch bar of iron, and the other parts in proportion The coulter is strong enough to cut through the root of the most stubborn shrub, of which there are thousands and some bearing the most beautiful flowers. It has a foot knife on it, in the rear part of which the plough point is inserted so as to stiffen the machine, and the the coulter thus cuts horizontally and perpendicularly at the same time. The plough cuts only about 6 inches deep but lays over a flat sod 18 inches broad, which is left to rot and decay under a summer sun. The breaking up of a prairie, is the only expensive part of a farmer's business, after stocking his farm.—In three years, he will have a farm, more easily wrought than the oldest in the Eastern States. With health the West is the place for a man to make a living and it is there where rural villages of mechanics and farmers would prosper well. But every one must have his own vine and fig tree to sit under, and as Emerson hath it, "Each sit on his own throne." Republican hamlets of this description might be a great blessing to our own city population, and societies of working men might contribute and lay up a fund for this purpose, but it must be reciprocal, it must be equal, each must pay alike, each must share alike, each must have his own, and the fund should only be a collective treasury to gather in, or as inducement to pay in money that might be thrown away carelessly by many mechanics. Much good might in this way be done, but there must be no risk, and this can be avoided. The qualifications of the settlers must be honesty, intelligence and industrious habits, and the ability of making cloth, building houses, making and raising food, and with these qualifications, all the necessaries and comforts of life can be easily secured, along with a perfect republican independence.

These ideas are not Utopian, nor do they savor of novel impracticable philosophy, but are thrown out as hints to develope more and more the benefits of a free government in the formation of minor republican institutions which will strengthen and beautify the general federacy as drops of water tend to form the great ocean. G. R.

Patent Fish Hooks.

Many of our readers are aware, that some trouble about Fish Hook Patents was experienced in this city by the purchase of part of a patent by a Mr Marsh from Connecticut, who came here with $500 to speculate, but who unfortunately, (for we believe him to have been deluded or demented) lost both is money and his freedom. We do not know whether fish hook inventions are worth a single red cent or not, we at least prefer the old hook without spring or *sockdologer*. Knowing that the following claims of the patentees, for the patents granted last week, will be of some interest to some of our readers, we here present them.

To D. Ellis and C. F. Grilley, of New Haven, Conn , for improvement in Spring Fish Hook. Patented August 15, 1848. Claim.—What we claim is the application of a catch or dog, attached to a fulcrum on the main bar or shaft of the spring fish hook, in such a manner that when the hook is set, one end of the catch or dog may rest in a notch or hole in, or against the projection on the heel of the shaft of the striking hook, or gaft, so as to secure it firmly in is position, and not allow of its being sprung by any strain on the line or cord, by either the weight of the hook and bait, when casting it into the water, or the motion of a live bait while in the water ; and the other end in such a position, near to, and a little below, the point of the baited hook, as to allow the mouth of the fish readily to press it back, and spring the hook.

To William P Blake, of New York City, for improved Spring Fish Hook. Patented August 15, 1848. Claim.—What he claims is the construction of an expanding spring hook with a catch without moveable joints, bearings or slides ; and in such a manner that when set it occupies about the same space as an ordinary hook, also the confining of the hook in a set state, (so that the biting of the fish will spring it) by means of a notch or projection on one limb or shank of the hook into or on which the opposite limb or shank catches.

Hunting the Hipopotamus.

The hunters contrive various ways of taking these huge animals. Sometimes they dig a ditch into which they fall when they come upon the land, and sometimes they shoot them in the water.

A traveller, who went into Egypt, says, that some men having seen two of these animals go out of the river Nile to feed on the land, he succeeded in taking them in the following manner. Thinking they would go into the water where they went out, he sent some men to dig a large ditch near the bank of the river at that place. This ditch was covered with thin boards, not strong enough to bear these animals, and over the boards was strewed some dirt, so that they could not see their danger. In the evening as the animals were returning to the river, they both fell into the ditch. The traveller being told of this, went to the place with several men and destroyed these huge creatures with a small cannon. Their skins were preserved in salt, so that they might be sent to Europe, and it took four hundred pounds of salt, for each skin on the back, was an inch thick, and when dried were so hard that that neither a sword nor a ball from a gun would go through them.

It is very ridiculous for gentlemen to change sides with ladies at every corner, so as to give them the wall side of the walk, and to file out of a pew at church to let a platoon of women march up to the other end, but while the custom exists, women should go early to church The former custom should be struck down at once, it is so foolish.

Changes in the Relative Level of Sea and and Land.

The observations of science have demonstrated the fact, that the Island of Great Britain has been submerged in the ocean, to the height of at least 1700 feet above the present sea level. Mr. Robert Chambers has recently produced an interesting work on this subject, in which he advances and very ably maintains the theory, of the recession of the sea, in opposition to that of the upheaval of the land. The following extract presents a condensed summary of the author's reasoning on the numerous data furnished by observation and of the inference deduced therefrom :

"It has been my task to examine the heretofore known examples of ancient sea margins, with a view to ascertain if they bore any relations to each other ; to follow out a chain of research amongst similar, though less obvious markings at higher levels ; and to ascertain if these also stood in any natural relationship ; the final object being to determine as far as possible the questions above cited regarding the mode and circumstances of the shift of relative level.

The general result is that the superficial formation bear the marks of former levels of the sea at various intervals up to at least twelve hundred feet, thus involving the Glenroy terraces ; and that the markings in the several districts examined, as well as in the adjacent coasts of France and Ireland, do all of them fall into such conformity as to prove that the shift of level has been effected from at least that height with perfect equality throughout. This conformity in the levels over so large an area is, of course, favorable to the idea of a recession of the sea, as opposed to that of an elevation of the land ; since it is precisely what would result from the former operation, while there is an obvious difficulty in supposing that so large a portion as the crust of the earth could be subjected to repeated upheavals, and yet to preserve, from first to last, the original relation of the levels of its various parts to the centre of the earth, that between Paris and Inverness not a vertical foot of derangement could be detected."

Mr. Chambers also refers to certain terraces in America, and had he viewed them with his eyes, his opinions would have been doubly strengthened. There are abundant evidences throughout this State at least, of the receding of waters, not the upheaval of land, among which the Ridge Road from Rochester to Lockport 60 miles in length, is good evidence. But we hold to the doctrine of an elevating cause too,—there are as strong evidences of the one as the other.

The Gullibility of Mankind.

Man is considered but a creature of merchandise, in every sense of the term. Deception is the ruling practice for securing either wealth or power. The quack-doctor has a cure for every ill. There is no use of any man dying now-a-days,—the resurrection pill has settled that question ; and it is common to see advertisements at the doors of dry good stores, "Selling off below cost," "selling off at cost," &c. These men are exceedingly benevolent to the public. They take the trouble to lay out their money, buy goods, ship them, pay store rent, and retail them *all at cost*, so that the public might get cheap goods. Such charity ought to have its reward. Your *great men* too, are exceedingly benevolent. Not one of them who has labored hard to be elected to some important office, but does it all in order that they might "do the State some service." When making a speech, after being elected it is always "I thank my fellow citizens for the high honour conferred upon me in electing me to represent your interests in the Congress of our country." He never looked to his own interests—charitable man.

Camphene Lamps being filled while lighted are supposed to explode in consequence of the liquid touching the flame. This is an error. They explode without bringing the liquid in contact with the flame. The liquor gives out a gas which takes fire and causes the explosion. The lamp should never be opened or filled while burning. A number of very afflicting accidents have occurred by people filling a camphene lamp without blowing out the light.

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Show them to your Friends.

With the present number we send to each of our subscribers a prospectus of the forthcoming volume, earnestly requesting their aid in extending the circulation of our paper. As well wishers of Art and Science, as subscribers to the Scientific American, we feel assured that they would, without further persuasion, do all in their power to help on our enterprize. But we are determined that those who exert themselves on our behalf shall receive a proper testimonial for their kindness. We have lately prepared for them a most valuable gift—a work containing the PATENT LAWS OF THE UNITED STATES, together with information upon *all Patent Office business*, including *full directions for taking out Patents*, method of making out the specifications, claims, drawings, models, buying and selling rights, caveats &c. &c. It is one of the most valuable works which have ever been published in this country, and will prove a treasure to its possessor. We propose to present a copy of this rare work to all who will obtain for us *three* subscribers, and as the gift will in a hundred fold repay for the trouble taken to obtain it, we expect to be obliged to give away a great many copies. The lucky ones will receive their presents by mail as soon as the three names with the subscription money reach us. It will be an easy matter for them to obtain two names besides their own, particularly, if they will show the prospectus among their friends and persuade them to subscribe.

TO CORRESPONDENTS.

"E. L. of Penn."—We could not tell whether you meant the tubes in the boiler or the pipe of draught, or the opening through the centre. You should have been more particular in language. If you mean the diameter of the boiler, have it narrow enough to be easily cleaned; if a water tube, let it be two and a half inches on the outside; if a draught tube or pipe have it ten inches in diameter. For the bituminous coal, recollect that it must be oftener cleansed than for anthracite, but the difference in diameter must not be much greater

"A. H. of N. Y."—We know of no plan to close the pores of oak casks, that would not be injurious to the timber for such purposes. We have been informed that both saws and cutter wheels have been used for stave jointing, but cannot say which is most approved nor where they may be both seen in operation. The cutters must be best.

"W F. L. Esq. of Rochester."—Your valuable communications have come to hand and are under consideration for publishing. Many thanks for your kindness.

"W. B. S. of N. H."—We have never been in the small beer trade, consequently cannot inform you of all the particulars concerning its manufacture.

"E. R. of Mass."—The Mile Indicator, has been long konwn and plenty are made in this city.

"A. L. of Mass."—The published description explained the principal fully with the exception of the pattern revolving, and this could not be objected to if you chose to use it. You will perceive that we performed not a very easy task with the materials at command.

"J. L. P. of Mass."—At present we do not know the mode of producing the enamel on the paper you have sent, but we shall endeavor to get the information if possible.

"A. M. of Penn."—The grooved cylinders of hard wood look to us as something good for the breaking of hides, but at present we know of nothing better in use than the fulling stocks.

"S. B. of Md."—We are much obliged to you for the information.

"H. B. of N. Y."—Each application takes its turn. The mode of making cast iron into malleable iron is a process which will take some space and time to describe. We will try and send you the information. One mode is patented.

"A. H. of Maine."—Your model must be in the Patent Office by this time. It was forwarded when we sent the specification Sometimes there is considerable delay at the Custom House Agent's Office.

"J. M. O'B.—Yours has just come to hand We shall give it attention. See next number. You were not mistaken about an adequate force in the Patent Office.

"W. H. E. of Ky."—We cannot tell what length of boiler may be most suitable for your purpose, only that it is required to be one third longer than for coal. Build your chimney thick at the base with brick, if you use brick, to retain the heat. The proportion of the chimney to the flue must be equal in area But we assure you there is no standard. We would prefer to construct one of one third less diameter than the flue, with a gentle increase of diameter to the top. You cannot go wrong to have a boiler a little larger than the amount of steam you need and by having a damper in the chimney, you can regulate the draught.

"D. E. S. S. of Penn."—The plan of the rotary engine is not new, but the water ram is. We know of none like it and have no doubts of a patent, for it must be a useful improvement

"J. S. D. of Jaffrey."—On page 286 of this volume Scientific American, there is an account of an artificial hand made by Kratchmer and Kildea, Dock st., Philadelphia.

"J. F. C. of Conn."—When A, the inventor, puts up the improved part of the machinery by contract, he surely makes sale of the same, and no after patent will allow him or any other person to make a purchaser pay twice. If the assignment had been made to B, before A built for C, then he would be responsible to B.

"J B. of Mass."—Gutta percha and linen threads have been combined in England and secured by Brooman in his patent for a new fabric. In our opinion it would make a very indifferent tape, for the pure gutta percha becomes as hard as horn and therefore it would not be sufficiently flexible. We know of no substance to equal good linen tape, although it has the fault which you mention.

"S. E. of Conn."—Your plan of a Dock is old. It is the same as all those built in Liverpool. In this city, considering the continued depth of water, our section docks are the best in all their adaptations.

"O. P. B. of Illinois."—Your plan of a spoke machine is similar in principle to one invented in Portland, Maine, and for which letters patent have been applied for, but in our opinion will not be granted, as the same principle has been known and applied in regular turning for a number of years.

"J. S. of Ky."—All your papers and model have been sent to Washington.

Advertisements.

☞ This paper circulates in every State in the Union, and is seen principally by mechanics and manufacturers. Hence it may be considered the best medium of advertising, for those who import or manufacture machinery, mechanics tools, or such wares and materials as are generally used by those classes. The few advertisements in this paper are regarded with much more attention than those in closely printed dailies.

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The Best Patent Agency in the United States.

THE subscribers would respectfully give notice that they still continue to attend to Patent Office business as usual. The long experience they have had in securing patents, together with their unrivalled facilities, enables them to say that THE BEST PATENT AGENCY, in the United States, IS AT THE OFFICE OF THE SCIENTIFIC AMERICAN, New York. It is not necessary, as commonly supposed, for an inventor to make a journey to Washington in person, in order to secure a Patent, as he cannot in any manner hasten the Patent or make his invention more secure. Any business connected with the Patent Office may be done by letter, through the SCIENTIFIC AMERICAN OFFICE, with the same facility and certainty as though the inventor came in person. From a want of knowledge on this point, applicants for patents are often obliged to submit to great vexation, with loss of much money and time. They also frequently fall into the hands of designing persons, and lose their inventions as well as money. Those who wish to take out Patents or enter Caveats, should by all means have the business transacted through the SCIENTIFIC AMERICAN OFFICE, as they may then RELY upon its being done in a straight forward and prompt manner, on the very lowest terms. All letters must be POST PAID and directed to MUNN & CO.,
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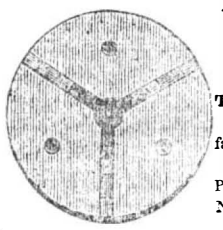

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JUST received from the manufactory and for sale, price $250, a new and splendid two horse engine and boiler, made in the very best manner, complete in every respect. They are of the latest pattern, the engine attached to the boiler in order to occupy but little space. The necessary steam pipes are included and as the connections, which are stationary, are already made, it can be sent in running order, to any part of the United States. No mason work or soldering is required, and the purchaser, to put it in operation would have only to make a fire in the furnace. MUNN & CO.
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Judson's Stave Dressing Machine.

THIS Machine, on which Letters Patent were granted May 1st, 1847, has been in successful operation for the past year, and hundreds of thousands of staves have been dressed by it. It is warranted to dress the same quantity of staves with as little power as any that can be started, also leave the full thickness on thin edges and thin ends, and conform as near to the crooks and twists of the timber as can be desired. The jointing of the machine which accompanies it, has been subjected to the severest test, and pronounced superior to that performed by hand. Application for a patent on the Jointer has been made.

Large quantities of Hogsheads and Shooks made with staves dressed and jointed with their machines have been sold and used to the entire satisfaction of the purchasers.

For rights and machines address the proprietors at their Manufactory, Artizan street, New Haven, Connecticut, where machines in full operation may be seen. JUDSON & PARDEE.
New Haven, July 17, 1748. jy29 3m*

A Twelve Horse Steam Engine and Locomotive Boiler for one half their cost.

BOTH the above are of the VERY BEST KIND, nearly new and in perfect running order Their cost when new was $1600. The engine is a horizontal one, of simple construction, and is a splendid piece of work. The boiler is of the heaviest wrought iron made in the very best manner, and with proper care will be warranted to last for 10 years. The cost of fuel is 40 cents per day. The above are now offered for sale to close a concern for $800, cash. It is an opportunity seldom met with. They may be sent with perfect safety to any part of the United States, and if desired, an engineer will accompany and put them in operation. Apply to MUNN & CO.,
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To Cotton Manufacturers.

THE Subscriber will furnish Cotton Manufacturers with his improved Cotton Willow. The fact of its being introduced into most of the best mills in New England is the best proof of its excellence. It is extremely simple in its construction and will do more and BETTER WORK with a less expenditure of power than any other Willow; it prepares the cotton so much better than any other that there is much less power and repairs needed on the succeeding machinery. it is as safe from fire as a Card, and its form and action are such as to draw all the flyings and dirt from the journals; it will convey the cotton to any desirable distance short of 250 feet. It can be placed in the basement of a mill or other place nearly worthless for other manufacturing purposes, and will blow the cotton into the rooms above. All necessary information given for placing and operating the machine in any peculiar or difficult situation.
EDMUND BACON,
Superintendent Quinebaug Manufacturing Co.
j24 tf Norwich, Conn.

Patent Agency.

THE undersigned having established permanent agencies in England, Ireland, Scotland, France and Belgium (with the leading manufacturers and inventors of which countries he is personally acquainted), is enabled to transact all business entrusted to his care with perfect safety and dispatch; and such is the integrity, energy and legal ability of our agents, that the patentee is, in ninety-nine cases out of a hundred, sure to reap a rich harvest from any invention which passes through our hands.

Since the first of March last we have sold three patents in Great Britain for $17,580, and five in France for 38,000 francs.

For integrity, the undersigned refers to:—Horace Greeley, Esq. Tribune Buildings, New York.
CLINTON G. GILROY,

All letters must be POST PAID, and addressed to Clinton G. Gilroy, 71 Nassau st. New York. jy1 3m*

Improved Electro Magnetic Machine for sale cheap.

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s9 tf. Pub. Sci. Am. New York.

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From 1 1-4 to 6 inches diameter, and any length, not exceeding 17 feet.

THESE Tubes are of the same quality and manufacture as those extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.
THOMAS PROSSER, Patentee,
d26 28 Platt street, New York

Johnson's Improved Shingle Machine.

THE Subscriber having received Letters Patent for an improvement in the Shingle Machine, is now ready to furnish them at short notice, and he would request all those who want a good machine for sawing shingles, to call on him and examine the improvements he has made, as one eight more shingles can be sawed in the same given time than by any other machine now in use.
Augusta, Maine, Oct. 1, 1847. J. G. JOHNSON.

GENERAL PATENT AGENCY.
REMOVED.

THE SUBSCRIBER has removed his Patent Agency from 189 Water to 43 Fulton street.

The object of this Agency is to enable Inventors to realize something for their inventions, either by the sale of Patent Goods or Patent Rights.

Charges moderate, and no charge will be made until the inventor realizes something from his invention.

Letters Patent will be secured upon moderate terms. Applications can be made to the undersigned, personally or by letter post paid.
au8 SAMUEL C. HILLS, Patent Agent.

Johnson & Robbins,

Consulting Engineers and Counsellors for Patentees.

Office on F street, opposite Patent Office, Washington, D. C. j17 tf

☞ The above is prepared to execute all orders at the shortest notice and on the most reasonable terms.

To Mill Owners.

HAVILAND & TUTTLE'S Patent Centre Vent Pressure Water Wheel.—These wheels are now in successful operation in many towns in Maine, Massachusetts, and Rhode Island, and are found to surpass in power and facility of adaptation any water wheel now in use. This wheel was awarded the silver medal at the Fair of the American Institute recently held in New York and a diploma at the Mechanics' Fair in Boston.

The wheels are manufactured and for sale by the FULTON IRON FOUNDRY CO., South Boston, Mass.,—where the wheels can be seen and any information concerning them had.

Patent Rights for different States, Counties, &c. for sale, as above. m25 6m*

Machinery.

PERSONS residing in any part of the United States who are in want of Machines Engines, Lathes, OR ANY DESCRIPTION OF MACHINERY, can have their orders promptly executed by addressing the Publishers of this paper. From an extensive acquaintance among the principal machinists and a long experience in mechanical matters they have uncommon facilities for the selection of the best machinery and will faithfully attend to any business entrusted to their care MUNN & CO. a15

LAW'S
STAVE DRESSER AND JOINTER.

THE undersigned has perfected and put into very successful operation his Stave Machine.

It will **Dress** and **Joint** Staves of all shapes, kinds and dimensions, and of promiscuous widths, as they come from a mixed pile, at the rate of from 6 to 8 staves per minute, finishing them, before they leave the machine, ready for the truss hoop. They are both dressed and jointed very smoothly and handsomely, bringing each stave of equal width at the two ends WITHOUT WASTE OF STOCK and perfectly to correspond with every twist or crook, and with as little power in proportion to the work done, as any other machine.

For rights (which are indisputable,) or machines address, post paid.
H. LAW, Wilmington, N. C.

N. B A machine will be in operation in New York or vicinity, in the course of the ensuing month.
jy15 2m

Coal.

THE Subscriber has constantly for sale by the cargo or ton all sizes of Coal for MANUFACTURERS and FAMILIES, from the best Schuylkill and Lehigh mines. Hazleton and Spring Mountain, lump and steamboat Coal. Tamaqua Chesnut for engines.—Peach Orchard and other red ash Coal. Midlothian, Virginia, a superior article for smith's use. Cumberland, Sidney and Liverpool Coal. For sale at the LOWEST market prices. J. P. OSTROM,
au5 3m* corner 10th Avenue and 26th st.

TAFT'S PREMIUM LETTER COPYING PRESS.

THE Subscriber continues to manufacture his Premium Letter Presses, at Worcester, Mass., and respectfully informs his friends and the trade generally, that he keeps constantly on hand a large assortment, which he offers for sale at reduced prices. Orders by mail will be promptly attended to
GEO. C. TAFT,
Worcester, Mass., April 11, 1848. au5 tf

PREMIUM SLIDE LATHE.

THE subscriber is constantly building his improved Lathes of all sizes, from 7 to 30 feet long, and can execute orders at short notice.
JAMES T. PERKINS,
Hudson Machine Shop and Iron Works,
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Agricultural Implements.

☞ Inventors and Manufacturers of superior Agricultural Implements may find customers for their goods by applying at the Agricultural Warehouse of S. C. HILLS & CO. 43 Fulton st. au8

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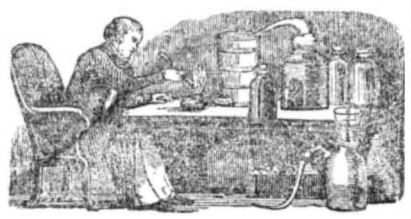


Manufacture of Saltpetre.

The successive Goverments of France have, for many years, encouraged every invention and improvement in the production of nitrate of soda, to render them, if possible, independent of England for the necessary supply to the gun powder works. The artificial nitreries, or nitre beds, collected for this purpose, consists of animal matter, the rubbish from the walls of old houses, stable litter, refuse of plaster works, &c. The decomposition of the animal matter produces carbonate of ammonia, which, dissolved in water, in connection with air charged with oxygen, is transformed into nitrate of ammonia. This product, under the influence of the solar ray, and the action of time, decomposes the calcareous and magnesia carbonates in the plaster rubbish, forming nitrates of lime and magnesia and reproducing carbonate of ammonia, which, set at liberty, serve anew to form the nitrates. According to this theory, the nitrate plays a double part; it serves to reunite the elements of the atmosphere to produce nitric acid, and it causes this acid, formed under its influence, to act on the insoluble carbonates, to change them into nitrates. But this action is not the only one; for Kuhlmann, discovered that in most instances, the ammonia itself was decomposed, and that its nitrogen, combined with the oxygen of the atmosphere contained in the water, is thus transformed into nitric. These calcareous and other earthy nitrates dissolved in water are decomposed by sulphate of soda, thus forming nitrate of soda and sulphate of lime by double decomposition. The nitrate of soda is then heated with chloride of potassium and nitrate of potash (saltpetre,) and chloride of sodium (common salt) obtained.

Saltpetre is found native in the Mammoth Cave, Kentucky, and it is contained in the ashes of tobacco. Porous limestones through the agency of dew operates upon the constituents of the atmosphere to produce nitric acid without animal matter, yet it is well known that the admixture of animal offals with calcareous earth facilitates the production of saltpetre—hence the mode adopted to produce it by the French, and in this we can see a reason for the formation of nitre in city wells, described in a previous number of the Scientific American.

It takes two years to form, artificially, saltpetre, and during the wars of the revolution 2000 tons were annually made in France, mostly in Paris. In Sweden each peasant who has a house, is bound by law to make a certain quantity every year for the use of the State. In Spain, Egypt, Persia and India, vast quantities of saltpetre are formed by nature spontaneously, especially in India. This is a source of great profit to England as it is much used in the manufacture of gunpowder and for making nitric acid and a number of other things.

Poison of Silver and its Antidote.

The only preparation of this silver likely to act as poison, is nitrate, which has been used in medicine; particularily of late in epilepsy.

When injected into the veins, it produces death speedily, and without our being able to ascertain the cause. But we shall notice these effects no more; as there is scarcely any substance, apparently the most simple, which does not in the same way produce death, and with the same trains of symptons. The action on the animal economy, in these cases, is not understood; but, in practical view, it is of moment, as death does not occur, either accidentally or designedly, in this way, unless in the case of experiments on animals.

The symptoms which nitrate of silver produces when taken in the stomach in a large dose, are exactly the same as those caused by the other metalic poisons. Blueness of the lips, from the change induced on this salt from exposure to light, in an additional symptons, which, when it is present, serves to indicate the nature of the poison. The appearance after death differs in nothing from those caused by the other metalic poisons.

When nitrate of silver has been given medicinally in small doses for any length of time, it is deposited between the skin and epidermis, producing a livid stain which never can be discharged, and which causes a great deformity through life.

TREATMENT OF THE PATIENT.

The muriate of soda, or common salt, decomposes this substance, and destroys its deleterious qualities.

Salt should therefore be given immediately diluted in as much warm water. Mucilaginousdrinks may then be given to diminish irritation.

The nitrate of silver is used to dye hair black.

Walking.

Of all kinds of exercise, walking is that which is the most universally attainable, and at the same time the best. Calling so many muscles into action, and especially those of the lower extremities, of which the circulation is apt to be more languidly and imperfectly performed, from the degree of resistance presented by the force of gravity to the return of the blood to the heart—calling, moreover, so much of the moving apparatus of the body into a reciprocal and balanced action, flexor and extensor muscles being correspondently exercised—walking is undoubtedly the best of all exercises for the purposes of health independantly of its secondary, and by no means little useful effect, of carrying the respiratory organs into the freer and purer air, and exposing the system to the extraordinary and (at least in the colder and temperate countries of the earth) the healthful influence of the direct rays of the sun. The degree of the exercise must of course vary with the age, condition, and habits of the individual; but the degree of the exercise that is in most cases serviceable is generally much underrated. Three miles a day is the minimum distance which a person of moderate health and strength ought to walk. If the powers of the system increase, or are stronger to begin with, the minimum ought to be four miles. The subject should be able, in most cases, to walk four miles in an hour; and the invalid, beginning, perhaps by walking a mile, or a mile and a half, in an hour, might gradually increase his rate of walking until he had accomplished this end. Quick walking calls more muscles into action than slow walking does, and is therefore better. The muscles of the back and trunk, neck and arms are comparatively very little used in slow walking. A person can hardly walk quickly without using them to a very considerable degree. It is a maxim so sound and important, as to deserve frequent repetition, that the greater the number of the muscles used the more advantageous will be the exercise.

Cranberries a Cure for Cancer.

The Tuscaloosa Observer says it has "seen it stated, more than once, that the common cranberry was efficacious in the cure of cancer, but have never, until very recently, been an eye-witness to the fact. Mr. Middleton Belk, residing within four or five miles of this city, who was afflicted with a cancer on the nose for the last eight years, was induced to try cranberries applied as a poultice; and to his great joy and satisfaction, has experienced a perfect and radical cure. We mention this fact at the instance of Mr. Belk, who is desirous that others suffering under the same affliction, may avail themselves of this simple, but valuable remedy.

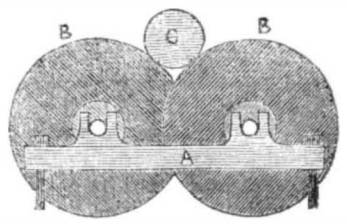
Taking Wrinkles out of Papers.

It is presumed that as many as 8000 volumes of last year's numbers of the Scientific American will be bound and that those who have received their numbers by mail may know how to straighten out their papers as smooth as they were before folded, we give the following simple receipt: Take each number of the paper separately, open it, sprinkle it slightly with pure water, place it between two sheets of clean smooth paper and run a warm sad iron over it, or if you have a press at hand place the sheets between pasteboards and press them all at once.

MECHANICAL MOVEMENTS.

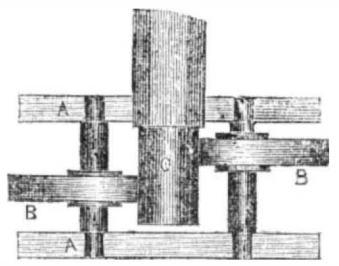
Friction Wheels.

FIG 1.



Friction wheels are used for the purpose of diminishing the friction on bearings, and their value depends upon converting a sliding into a rolling motion—the stress being borne by the axles of the friction wheels. The construction and operation of the friction wheels will be better understood by these engravings,

FIG. 2.



in which figure 1 is a vertical and figure 2 a side view. A A, represents an iron plate, which is generally made to be bolted square down upon the framing. It has holes in it to receive the friction wheels B B, and has supports cast upon it, which are provided with sockets for brasses in which the pivots of the friction wheels revolve. The friction wheels being fixed in their places, the gudgeon C, of the shaft lies between them, so that when it turns round, it rolls upon, or rather their circumferences move with it, and consequently the pivots of the friction wheels move so slowly as to diminish the friction far more than if the journal revolved in a permanent bearing. The proportion of this depends upon the diameter of the friction wheels and the gudgeon of the shaft C.

There are two or three more plans for modifying the friction of journals—the one displayed in these engravings is far better than some others which we have seen proposed, but we will present another plan in our next number, which some have esteemed much superior to this.

Near Sightedness.

In all persons that are extremely fair-haired, and white-skinned, there is either a deficiency in the quantity, or a derangement in the quality; or, (speaking technically,) a morbid secretion of the colouring matter of the skin, and of the black pigment, Pigmentum Nigrum, of the eye, a black or darkish looking substance that completely overspreads that delicate expansion of the optic nerve, the retina, and acts as a shade to it, and prevents the too strong action of the rays of light from deranging its fine organisation.

If this Pigmentum Nigrum is either deficient in quantity, or too transparent in its nature, to act as a proper and sufficient shade, there will, in such cases, be a proportionate contraction of the pupils, in order to prevent too strong a glare of light striking upon the retina, and in proportion as the pupil is contracted, the distance of vision will be lessened.

It is from this cause that the Albinos, or Leuco-Æthiopians, take their strange peculiarity. In their case, there is probably a total want of the Pigmentum Nigrum, and, from the exceeding vascularity of the iris, in the completely transparent eye, the peculiar *red* appearance arises.

The colour of the eyes of white rabbits, white mice, owls, sparrows, &c., arises from the same causes; if a person will look clearly into the eyes of one of these animals he will distinctly see the manner in which the objects are *inverted*.

A specimen of Iron has been exhibited in Charleston, procured from the works of Cooper, Strouth & Wiley, Cass Co. Ga., converted into steel, and pronounced by judges to be fine for razor blades.

Tomato Ketchup.

This being the season of the year for Tomatoes, we give the following, which, from long experience, we know to be the best receipt extant for making tomato ketchup:—

Take one bushel of tomatoes and boil them, until they are soft; squeeze them through a fine wire sieve, add half a gallon of vinegar, three half pints of salt, two ounces of cloves, quarter of a pound of allspice, three ounces of cayenne pepper, three table-spoonfuls of black pepper, and five heads of garlic skinned and separated. Mix together, and boil about three hours, or until reduced to about one-half; then bottle without straining.

Iron Bedsteads.

In looking to benefits conferred upon man, would some of our moulders give their minds up to the study of a new cast iron bedstead; one that would be convenient as being easily tightened, having a small cast iron wheel with a bracing clamp, to be screwed up with a small lever. Such a bedstead would occupy less room than a wooden one, iron being stronger than wood, to the same bulk, and above all it would be easily kept clean, and there can be no doubt but they would thus be more healthy likewise.

To Extract Lamp Oil from a Dress.

We have seen a receipt going round stating that "if a dress receives oil upon it, and it is then immediately rinsed in two or three changes of water in a tub, that the oil would all be taken out." This is entirely erroneous. The only way to remove oil from a dress, is to use fine soap in cold water. The reason of this is, that the oil combines with the alkali in the soap and is rendered thereby soluble in the water, which every body knows is not the case with pure oil and water—they will not mix.

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